

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1. (Currently Amended) A method for manipulating the ~~an~~ intrinsic strain of a ~~celleels~~, comprising culturing the cell on a substrate or in a medium, thereby forming a cultured cell; and administering to ~~treating the~~ cultured cells either *in vivo* or *in vitro* with ~~compounds~~ a compound that affect the ~~resets the~~ intrinsic strain setpoint of the ~~celleels~~ in order to modulate extracellular matrix synthesis, secretion, stiffness, organization and/or remodeling, or attachment of the cells to the matrix via integrins or other like cell-matrix attachments, wherein the compound is a cytokine that adjusts the intrinsic strain of the cell by modulating a cytoskeletal gene.

Claim 2. (Currently Amended) The method according to claim 1, wherein the ~~cells~~ cell ~~comprises~~ ~~comprise~~ ~~an~~ *in situ* native tissue.

Claim 3. (Currently Amended) The method according to claim 1, wherein the cell ~~comprises~~ ~~cells~~ ~~comprise~~ ~~an~~ *in vitro* fabricated tissue engineered construct.

Claim 4. (Currently Amended) The method according to claim 3, wherein the tissue engineered construct is a human tendon internal fibroblast (HTIF)-populated bioartificial tendon (~~BAT~~TM) or other fibroblast from another connective tissue.

Claim 5. (Currently Amended) The method according to claim 3, wherein the compound is added at the ~~beginning~~, during or after ~~at the end of fabrication of the tissue engineered construct~~ is fabricated.

Claim 6. (Currently Amended) The method according to claim 1, further comprising applying a mechanical external strain to the ~~cells~~ cell.

Claim 7. (Currently Amended) The method according to claim 6, wherein the mechanical external strain is comprised of uniaxially loading a tissue engineered construct by placing A-rectangle™-loading posts beneath a well of a culture plate and applying a vacuum to deform a flexible membrane downward so as to apply a uniaxial strain along a long axis of the tissue engineered construct.

Claims 8 – 12 (Cancelled).

Claim 13. (Currently Amended) The method according to claim 1, wherein the compound is a cytokine which adjusts the intrinsic strain of cells by modulating gene expression; ~~said gene expression selected from the group consisting of cytoskeletal genes that express cytoskeletal proteins~~ protein is selected from the group consisting of actin, myosin, α -actinin, vimentin, vinculin, and titin and others; genes; genes that express elastin; and genes that express matric metalloproteinases.

Claim 14. (Currently Amended) The method according to claim 13, wherein the cytokine is selected from the group consisting of interleukin-1 beta (IL-1 β) and tumor necrosis factor-alpha (TNF- α) (~~TGF- α~~).

Claims 15-18 (Cancelled)

Claim 19. (New) The method according to claim 1, wherein the cytoskeletal gene is a gene that expresses or regulates the expression of elastin or matrix metalloproteinase.

Claim 20. (New) The method according to claim 1, wherein the cytokine is interleukin-1 beta (IL-1 β).